Amendments to the Claims

This listing of the claims will replace all prior versions, and listings, of claims in this application.

Claim 1-10 (cancelled).

Claim 11 (currently amended): A method comprising:

performing a heat-treatment on a plurality of silica gel pellets for n minutes, wherein the heat-treatment includes a temperature increasing stage of duration about n/2 minutes, and a temperature maintaining stage of duration about n/2 minutes:

wherein during the temperature increasing stage the silica gel pellets are heated <u>from ambient temperature</u> at between about 5°C min⁻¹ and about 70°C min⁻¹:

wherein during the temperature maintaining stage the silica gel pellets are maintained at between about 1050 °C and about 1200 °C; and

wherein the heat-treatment is performed in a rotary tube furnace.

Claim 12 (previously presented): The method of Claim 11, wherein *n* is between about 20 minutes and about 60 minutes.

Claim 13 (previously presented): The method of Claim 11, wherein during the temperature increasing stage the silica gel pellets are heated at between about 10°C min⁻¹ and about 70°C min⁻¹.

Claim 14 (currently amended): The method of <u>Claim 19, Claim 6</u>, wherein the silica gel pellets have pores with a size between about 20 Å and about 70 Å, and a pore volume between about 0.3 mL g^{-1} and about 1.1 mL g^{-1} .

Claim 15 (new): A method for fabricating a porous silica sphere, the method comprising:

placing a plurality of silica gel pellets in a rotary tube furnace;

upon placing the silica gel pellets in the rotary tube furnace, increasing the temperature in the rotary tube furnace at between about 5 $^{\circ}$ C min⁻¹ and about 90 $^{\circ}$ C min⁻¹, until the temperature is between about 1050 $^{\circ}$ C and about 1200 $^{\circ}$ C; and

holding the silica gel pellets in the rotary tube furnace for a predetermined time while the temperature remains between about 1050 °C and about 1200 °C.

Claim 16 (new): The method of Claim 15, wherein the temperature in the rotary tube furnace is increased at between around 10 °C min⁻¹ and around 70 °C min⁻¹.

Claim 17 (new): The method of Claim 15, wherein the silica gel pellets have pores with a size between about 20 Å and about 70 Å, and a pore volume between about 0.3 mL g^{-1} and about 1.1 mL g^{-1} .

Claim 18 (new): The method of Claim 15, wherein the silica gel pellets are held in the rotary tube furnace while the temperature remains between about 1050 $^{\circ}$ C and about 1200 $^{\circ}$ C until the porous silica sphere has a filling density between about 0.18 g mL⁻¹ and about 0.30 g mL⁻¹.

Claim 19 (new): A method for fabricating a porous silica sphere, the method comprising:

placing a plurality of silica gel pellets in a first rotary tube furnace;

increasing the temperature in the first rotary tube furnace at between about 35 °C min⁻¹ and about 70 °C min⁻¹, until the temperature is between about 400 °C and about 900 °C; and

Application Number 10/560,023 Amendment Filed 21 June 2011 Reply to Office Action of 23 February 2011

transferring the silica gel pellets to a second rotary tube furnace, wherein the second rotary tube furnace has a temperature between about 1050 $^{\circ}$ C and about 1200 $^{\circ}$ C.

Claim 20 (new): The method of Claim 19, further comprising:

holding the silica gel pellets in the first rotary tube furnace for between about 20 minutes and about 60 minutes while the temperature remains between about 400 °C and about 900 °C; and

holding the silica gel pellets in the second rotary tube furnace for between about 20 minutes and about 60 minutes while the temperature remains between about 1050 °C and about 1200 °C.

Claim 21 (new): The method of Claim 19, wherein the second rotary tube furnace has a temperature between about 1100 $^{\circ}$ C and about 1150 $^{\circ}$ C.